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JAPANESE TRADE STUDIES

Special Industry Analysis
No. 36

FAYON FABRICS

Prepared for the
Foreign Economic Administration
by
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FOREWORD

This is one of a series of Special Industry Analyses discussing from a commodity or individual industry point of view the outstanding items entering into the trade of Japan proper with its Empire and with foreign countries. These analyses are a part of a larger project which includes compilations (annotated) of the imports and exports of Japan proper by sources and destinations; surveys of certain of the colonial areas, emphasizing their Empire and foreign trade and postwar problems relating thereto; an over-all study of the trade of Japan proper; and a survey of Japan's shipbuilding industry and shipping services and requirements in the prewar period. In all of the studies Manchuria has been included as an Empire area owing to the political, economic, and military dominance of Japan in that area, especially during the last decade.

Most of the data in these analyses were taken from official and semi-official Japanese sources. Not only have errors and inconsistencies frequently been detected within individual volumes, but many data from different sources supposedly reporting on the same subject are irreconcilable. It is very likely that large shipments of goods reportedly moving to Kwantung from Japan have been in large part merely transshipments destined for Manchuria.

The present report is one of a number which were prepared during 1944 and 1945 for the Foreign Economic Administration by members of the staff of the United States Tariff Commission. Owing to the desire of the Foreign Economic Administration to obtain this material as promptly as possible, the reports were not reviewed by the Tariff Commission. All statements of fact or opinion in these reports are attributable to the individual staff members who prepared them. The reports were originally intended for confidential use of Government agencies, but are now being made public with the consent of the Foreign Economic Administration.

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RAYON FABRICS

Introduction and summary

Rayon weaving since its beginning in the early twenties has been closely associated with the silk-weaving industry. Silk looms are adaptable for either silk or rayon; weavers therefore shift from one fiber to the other. Most of the weaving of rayon and silk in Japan is done in small family shops, having not more than five looms per establishment. There are modern mills having several hundred looms per establishment and usually very few in number. Although rayon weaving is linked for the most part with silk weaving, it is also conducted in part by mills specializing solely in the production of rayon fabrics. Only fragmentary data are available as to the size of the branch exclusively engaged in rayon weaving. It probably numbered less than 5,000 mills as compared with over 70,000 ^{1/} mills in the silk and rayon weaving industry in 1933-37.

The output of broad-woven, all-filament rayon fabrics in Japan is estimated to have exceeded a billion square yards in 1939, valued at 732 million yen. The combined production of narrow all-filament rayon fabrics and specialties, which are not reported in comparable units of quantity, averaged 73 million yen in value. Japan also produced in that year mixtures of filament-rayon yarn and other fibers, valued at 63 million yen. The aggregate value of the output of fabrics of all widths and types woven wholly or in part of filament-rayon yarn was therefore 868 million yen. In addition there were produced spun-rayon fabrics (made from staple fiber yarns) with an estimated value of about 275 million yen. The combined value of the Japanese output of rayon fabrics, woven of both filament and spun-rayon yarns in 1939 was accordingly slightly under 1,143 million yen.

Of the Japanese production of filament-rayon fabrics, the bulk of the wide goods were exported while the bulk of the narrow goods, mixtures and special fabrics were consumed within Japan proper. Japanese consumption of all types and widths of filament-rayon fabrics, pure and mixed, averaged about 54 percent of the value of the total filament-rayon fabric production in 1933-37 but declined to about 50 percent in 1939. On the other hand, Japan consumed in 1939 (the only year for which a comparison can be made) more than three-fourths of its production of spun-rayon fabrics. Of the combined output of filament-rayon and spun-rayon fabrics in 1939, almost 40 percent, by value, was exported and over 60 percent consumed at home.

^{1/} See Japanese Trade Study: Special Industry Analysis, No. 3, Fabrics, prepared for Foreign Economic Administration by U. S. Tariff Commission, September 1945. PURL: <http://www.legal-tools.org/doc/ba4052/>

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Japan is the world's largest exporter of rayon fabrics. Exports of filament-rayon fabrics, which are counterparts of silk constructions, were twice as great in value in 1939 as exports of silk fabrics and have exceeded silk fabrics in importance in the export trade since 1932. During 1937-39, total exports of rayon fabrics, both of filament-rayon and spun-rayon averaged 581 million square yards valued at 214 million yen or about one-fourth of the total value of the combined exports of woven fabrics of silk, rayon, cotton and wool. Rayon fabrics ranked next to cotton fabrics, exports of which averaged 483 million yen during that period or 56 percent of the total exports of the Japanese weaving industries. (See table 6.)

Although cotton cloth predominated in the total fabric export trade to all countries, rayon fabrics predominated in the export trade with Empire areas. In 1937-39, exports to Empire countries of the four principal classes of fabrics (cotton, rayon, silk and wool) averaged 258 million yen or 30 percent of the total exports of these fabrics to all countries. Exports of rayon fabrics to the Empire in this period, averaged almost 100 million yen or 38 percent of the aggregate fabrics shipped to these areas in contrast to cotton fabrics which averaged 73 million yen or 28 percent.

Exports of woven rayon fabrics (including both filament and spun) were valued in 1939 at 248 million yen or more than 3½ times the value of the combined exports of rayon in the fiber or yarn stage of manufacture. Rayon fabrics constituted in that year approximately 5 percent of the total value of exports of all Japanese commodities to Empire and foreign countries.

With the decrease in Japanese markets for raw silk in the postwar period as a result of the encroachment of nylon and other synthetic fibers, Japan will probably become more dependent on exports of rayon fabrics to obtain foreign exchange. The continuance of rayon weaving on a scale equal to or larger than in the prewar period will therefore be important for the rehabilitation of Japan. Rayon fabrics also bulk large in supplying the clothing needs of Japan itself. To the extent that rayon fabrics are substituted for other fabrics for domestic consumption, Japan will conserve the exchange formerly required for the purchase of foreign raw cotton and raw wool. Consumption in Japan of cotton and woollen fabrics for which imported raw materials were used, averaged nearly 600 million yen annually in 1933-37 or about 45 percent of the total consumption of fabrics of cotton, filament rayon, silk, and wool. (See table 1.)

1/ Including rayon filament yarn, raw staple fiber and spun-rayon yarn, the combined exports of which totaled 76 million yen. For further information see Japanese Trade Study, Special Industry Analysis No. 30, Rayon Yarn and Staple Fiber, prepared by U. S. Tariff Commission for Foreign Economic Administration, September 1945.

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Table 1.- Woven fabrics of cotton, rayon, silk, and wool, pure or mixed:
Summary of production, imports, exports, and apparent consumption;
annual average, 1933-37

| Type of fabric | Pro- duction ^{1/} | Imports | Exports | Apparent consumption |
|-------------------|-------------------------------|---------|---------|-------------------------|
| Value (1,000 yen) | | | | |
| Cotton | 867,939 | 3,164 | 523,411 | 347,692 |
| Filament rayon | 316,677 | 101 | 145,577 | 171,201 |
| Silk | 623,896 | 495 | 81,079 | 543,312 |
| Wool | 285,873 | 7,670 | 46,756 | 246,787 |
| Total | 2,094,385 | 11,430 | 796,823 | 1,308,992 |
| Percent | | | | |
| Cotton | 41.4 | 27.7 | 65.7 | 26.5 |
| Filament rayon | 15.1 | 1.0 | 18.3 | 13.1 |
| Silk | 29.8 | 4.3 | 10.2 | 41.5 |
| Wool | 13.7 | 67.0 | 5.8 | 18.8 |
| Total | 100.0 | 100.0 | 100.0 | 100.0 |

^{1/} Includes broad-woven goods (hirohabamono), narrow-woven goods (kahabamono) and special fabrics.

^{2/} In addition, exports to Formosa of cotton tissues and silk tissues not separately segregated amounting to 18,700,000 yen.

^{3/} Consumption less by 18,700,000 yen for exports to Formosa not segregated by class of fiber in fabric.

Source: Production data from Financial and Economic Annual of Japan. Imports and exports from annual and monthly returns of the foreign trade of Japan and Chosen (Korea). Apparent consumption computed.

Description and uses

Fabrics of rayon are of two types: those woven of continuous filament-rayon yarn and those woven of spun-rayon yarn ^{1/} made from staple fiber. The former are made in such constructions as satins, crepes, taffetas, voiles, habutae, foulards and broades, etc., most of which are style goods and counterparts of silk; the latter are chiefly utility fabrics in coarse and medium-weight constructions such as shirtings, sheetings, muslins, drills, jeans, poplins, serges, twills, gabardines, challis, nub and slub fabrics, flannels, blanketing and towel materials. Spun-rayon fabrics have a resemblance in texture and appearance to many fabrics woven of wool, cotton, and spun-silk yarns. Many spun-rayon fabrics contain blends and admixtures of these fibers.

^{1/} See Special Industry Analysis No. 30 on Rayon Yarn and Staple Fiber.

The bulk of the rayon fabrics are used for wearing apparel and for upholstery, draperies, and other decorative and household purposes. Certain specialized constructions of rayon goods were employed by the United States during the war for military purposes, particularly cargo and fragmentation bomb parachutes, and presumably were also so used in Japan.

Organization, location, and size of industry

The progress of rayon weaving in Japan is largely a record of transition from silk weaving. With its skilled workers and age-old traditions, the silk industry of Japan was preeminently adapted for weaving fabrics of continuous filament-rayon yarn, which in the main are replicas of silk fabric constructions. Filament-rayon yarn may be processed on the same equipment as silk, with only minor adjustments, and requires no new techniques in processing. The old-established silk industry uses silk and filament-rayon yarn interchangeably. Rayon is free from the erratic day-to-day price fluctuations characteristic of silk; its comparative price stability and orderly downward price movement were important factors in its adoption by silk weavers. Moreover, as rayon is cheaper than silk, less working capital is required by the small weaving establishments, most of which have limited financial resources.

Following the introduction of looms especially designed for rayon in the early thirties, the production of filament-rayon fabrics was begun by mills specializing in that branch of weaving. In 1934 some 2,380 mills employing over 44,000 operatives were engaged exclusively in the weaving of rayon. Subsequent data are not available, but it is not unlikely that the rayon weaving industry had approximately doubled in size by the end of the decade.

Fine rayon fabric weaving, like silk weaving, is primarily in the hands of small and medium-sized mills. There has been a marked tendency to establish weaving mills engaging less than 10 employees in order to avoid the factory law which applies to mills with 10 or more operatives. Cheap power enables the small mills to operate automatic looms effectively against the competition of larger mills. Probably less than a dozen rayon weaving companies in Japan are large-size concerns of first rank with regard to loom installations and volume of output. The factories making filament-rayon cloth are located largely in the prefectures of Fukui, Kyoto, Ishikawa, Gumma, and Tochigi. These areas also lead in silk goods production, and their proficiency in handling silk has been carried over and maintained in rayon piece-goods weaving.

The cotton textile industry in Japan also has adopted rayon as a supplementary raw material, producing not only admixtures of cotton and rayon but also fabrics wholly of filament-rayon and spun-rayon yarn. Since the introduction of staple fiber, the wool manufacturing industry has made extensive use of cut rayon fibers for spinning blended yarns for mixture fabrics.

Production

Of the combined output of filament-rayon fabrics and goods, valued in 1939 at 644 million yen, about 67 percent consisted of broad woven goods, and 23 percent narrow woven fabrics and specialties in chief weight of filament rayon having mixtures of other fibers, about 10 percent. In the category of broad woven goods, which totaled 432 million yen in value, 54 percent consisted of filament-rayon fabrics and 46 percent of spun-rayon goods. (See table 3.)

Table 3.- Japan: Total production of rayon fabrics, 1931-39
(In millions of yen)

| Year | All-rayon | | | Rayon mixtures 2/ | Grand Total |
|--|-------------|--------------|----------------|-------------------|-------------|
| | Broad-woven | Narrow woven | Specialties 1/ | | |
| Of filament-rayon yarn (artificial silk) | | | | | |
| 1931 | 70 | 13 | 22 | 18 | 123 |
| 1932 | 89 | 13 | 20 | 28 | 150 |
| 1933 | 111 | 20 | 18 | 40 | 189 |
| 1934 | 154 | 24 | 22 | 57 | 257 |
| 1935 | 147 | 39 | 28 | 66 | 280 |
| 1936 | 208 | 64 | 35 | 77 | 384 |
| 1937 | 270 | 74 | 38 | 90 | 472 |
| Average, 1933-37 | 178 | 44 | 28 | 67 | 317 |
| 1938 | 220 | 59 | 32 | 65 | 376 |
| 1939 | 232 | 46 | 27 | 63 | 368 |
| Of spun rayon yarn (staple fiber) | | | | | |
| 1939 2/ | 200 | 51 | 25 | 4/ | 276 |
| Total rayon fabrics | | | | | |
| 1939 | 432 | 97 | 52 | 63 | 644 |

Raw materials

Prior to World War I imported rayon yarns were used for weaving textile fabrics for Japanese consumption. Following the expansion of rayon yarn manufacturing in Japan in the late twenties, progress in the weaving of all-rayon fabrics was accelerated by the availability of a large supply of domestic rayon yarn at low cost.

Japan is wholly self-sufficient in raw materials for rayon weaving. It was the world's leading producer of rayon yarn and staple fiber in 1936-38. It consumed during the period 1933-37 an average of 182 million pounds of filament-rayon yarn annually, of which 86 million pounds went into the manufacture of fabrics for export. As a consequence of rayon by the textile industries in Japan is relatively small, the balance--96 million pounds--was used primarily in weaving fabrics for use within Japan. In 1939 nearly 200 million pounds of filament rayon were consumed in Japan, of which 73 million pounds went into fabrics for export and 126 million pounds for domestic weaving and knitting. In addition, the consumption of staple fiber for weaving for export in 1939 amounted to 41 million pounds as to that for domestic weaving about 222 million pounds.

Summary of production, imports, exports, and current consumption.

Quantity data for the rayon fabric output of Japan are incomplete and reported in dissimilar units for broad and narrow goods. Comparisons of total production, exports, and consumption can therefore be made only on a value basis covering the period 1930-39 for filament-rayon fabrics and the single year 1939 for spun rayon goods.

Despite the depression in the thirties an uninterrupted expansion occurred up to 1937 in the total value of the filament-rayon fabrics produced, exported, and consumed within Japan. Production rose steadily, reaching its peak of 472 million yen in 1937, after which it declined substantially. Imports, largely from Korea, have never played an important role, amounting to less than a million yen annually. Exports of filament-rayon fabrics were at their highest value level in 1939 as a result of rising prices rather than increased volume. Consumption, which at its maximum in 1937 amounted to 289 million yen, or about 60 percent of the total output, fell off in value in the two subsequent years. This decline is largely attributable to the operation of the export-import control system imposed by the Japanese Government on wool pulp in 1937 for yarn and fabric. Under this system the weaving industry was required to export a larger proportion of its output.

The total production of rayon fabrics of both filament-rayon and spun-rayon yarns amounted to about 644 million yen in 1939, the only year in which such data is available. Exports amounted to 248 million yen, or

1/ The position of Japan in raw materials for rayon yarn and staple fiber manufacture are discussed in Special Industry Analysis No. 30, Rayon Yarn and Staple Fiber.

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Spun-rayon fabrics, the production of which was first reported in 1939, are predominantly of the broad-woven type and consist principally of shirtings, muslins, serges, tenjiku cloth, drills, and jeans. The output of these fabrics, together with shirtings, flannels, poplins, and kokura cloth, amounted to 420 million meters (460 million square yards) valued at 150 million yen. The estimated quantity produced of other undesignated fabrics not reported in units of length probably averaged in that year 140 million meters (154 million square yards). ^{1/} The aggregate output of broad-woven goods of spun rayon in 1939 is thus estimated to have been 560 million meters (612 square yards) valued at 200 million yen. (See table 5.)

Exports

Japan is the world's largest exporter of rayon fabrics. Since 1932, exports of rayon fabrics (of filament yarn) have exceeded silk fabrics in importance. In 1939 exports of filament-rayon fabrics were over twice as great as silk piece goods in value and over 4 times as great in quantity. Japan has also been developing an export trade in spun-rayon fabrics, which increased from 8 million yen in 1937 (the first year for which data are available) to 62 million yen in 1939.

Total Japanese exports to all countries of filament-rayon and spun-rayon fabrics combined, which amounted to 192 million yen in 1937, rose to 248 million yen in 1939.

Compared with the value of Japan's total export trade in woven textiles (cotton, rayon, silk, and wool), exports of rayon fabrics, both (filament and spun) constituted 20 percent in 1937, 26 percent in 1938, and 30 percent in 1939. Rayon fabric exports were exceeded only by cotton fabrics which account for more than half of the total value of the exports of Japan's weaving industries. (See table 6.)

^{1/} The output of other fabrics not reported by quantity have been computed on the basis of the average unit value of the 11 specified constructions divided into total value of the "other" fabrics.

Table 5.- Japan: Estimated total production ^{1/} of rayon-rayon fabrics (made from staple fiber) classified by widths and types, 1939

| Type of fabric | Quantity | Value |
|--|----------------|-------------|
| | Million meters | Million yen |
| Broad goods: | | |
| Shirtings ----- | 112 | 33 |
| Muslins ----- | 97 | 28 |
| Serge ----- | 38 | 19 |
| Tenjiku cloth ----- | 33 | 11 |
| Drill ----- | 29 | 12 |
| Jeans ----- | 24 | 8 |
| Miscellaneous cloth for women's and children's apparel ----- | 23 | 10 |
| Sheetings ----- | 17 | 5 |
| Flannel ----- | 16 | 8 |
| Poplin ----- | 16 | 7 |
| Kokura cloth ----- | 15 | 9 |
| Total specified ----- | 420 | 150 |
| Other ----- | 2/ 140 | 50 |
| Total broad goods ----- | 560 | 200 |
| | Million tan | |
| Narrow fabrics: | | |
| Imitation nankeen ----- | 19 | 29 |
| Drill ----- | 2 | 5 |
| Other ----- | 2/ 9 | 17 |
| Total narrow fabrics ----- | 30 | 51 |
| | Million dozen | |
| Special materials: | | |
| Towels and sheets ----- | 3 | 10 |
| | Million pieces | |
| Blankets, shawls and rugs ----- | 3 | 9 |
| Other ----- | - | 6 |
| Total special materials ----- | - | 25 |
| Grand total ----- | - | 276 |

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1/ Estimated on basis of monthly production data available for February-December. January was interpolated on assumption production in that month was substantially same as in February.

2/ Quantity, not reported, has been estimated by dividing average unit value of total specified narrow fabrics into total value of "other".

Source: Data for 11 month period Feb.-Dec. 1939 compiled from U. S. Consular despatches.

Table 6.- Woven fabrics of cotton, rayon, silk, and wool: Japanese exports to Empire areas and all other countries, 1937-39

| Kind of fabric : | To Empire areas ^{1/} | | | To foreign countries | | | Total exports | | |
|-------------------------------------|-------------------------------|-------|-------|----------------------|-------|-------|---------------|-------|-------|
| | 1937 | 1938 | 1939 | 1937 | 1938 | 1939 | 1937 | 1938 | 1939 |
| | Value (Million yen) | | | | | | | | |
| Cotton ----- | 117 | 81 | 20 | 488 | 349 | 394 | 605 | 430 | 414 |
| Rayon ^{2/} ----- | 52 | 116 | 2/130 | 140 | 85 | 4/118 | 192 | 201 | 248 |
| Silk ----- | 14 | 22 | 55 | 69 | 44 | 36 | 83 | 66 | 91 |
| Wool ----- | 29 | 41 | 5/52 | 34 | 24 | 6/22 | 63 | 65 | 74 |
| Silk and cotton ^{3/} ----- | 22 | 22 | 8/ | - | - | - | 22 | 22 | 8/ |
| Total ----- | 234 | 282 | 257 | 731 | 502 | 570 | 965 | 784 | 827 |
| | Percent of total | | | | | | | | |
| Cotton ----- | 50.1 | 28.7 | 7.7 | 60.7 | 69.6 | 65.1 | 62.7 | 54.9 | 50.0 |
| Rayon ^{2/} ----- | 22.3 | 41.1 | 50.5 | 17.1 | 17.0 | 20.7 | 19.9 | 25.6 | 30.0 |
| Silk ----- | 5.0 | 7.9 | 21.6 | 9.5 | 8.7 | 6.3 | 8.6 | 8.4 | 11.1 |
| Wool ----- | 12.5 | 14.5 | 20.2 | 4.7 | 4.7 | 3.9 | 6.6 | 8.3 | 8.9 |
| Silk and cotton ^{3/} ----- | 9.2 | 7.8 | - | - | - | - | 2.2 | 2.8 | - |
| Total ----- | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |

^{1/} Korea, Kwantung, and Manchuria. Data for Formosa available separately only for wool fabrics.

^{2/} Including fabrics of filament-rayon yarn and spun rayon (made from staple fiber).

^{2/} For spun-rayon fabrics, includes Korea only as data for Manchuria and Kwantung were not separately reported.

^{3/} For spun-rayon fabrics includes Manchuria and Kwantung.

^{3/} Korea only as data for Manchuria, Kwantung, and Formosa were not separately reported.

^{3/} Includes Manchuria, Kwantung, and Formosa.

^{3/} Imports into Formosa from Japan not segregated as to silk fabrics and cotton fabrics.

^{3/} Not available.

Source: Compiled from annual and monthly foreign trade returns of Japan, Chosen (Korea), and Formosa.

Empire areas absorbed about 58 percent (on the basis of both quantity and value) of the total combined exports of filament-rayon and spun-rayon fabrics in 1938. About half of the exports of filament-rayon fabrics were to the Empire in contrast to 83 percent of the spun-rayon fabrics.

British India was the leading foreign market for filament-rayon fabrics until 1937. (See table 7.) Exports to India declined sharply thereafter, largely as a result of the expansion of rayon weaving in that country. The fall in exchange rates and the 25 percent increase in the Indian tariff on rayon textiles also contributed to the decline. Australia was the second largest market for filament-rayon fabrics. In January 1937 an agreement between Australia and Japan was concluded whereby Japanese rayon piece goods in Australia were placed on a quota basis.

The combined exports of filament-rayon fabrics to the major British-held areas, including British India, Australia, Union of South Africa, and New Zealand, but excluding Hong Kong, amounted to 32 percent of the average annual quantity and 49 percent of the annual average value of the Japanese exports in 1933-37.

Exports of spun-rayon fabrics were principally to Hong Kong and Finland in 1937 and 1938; Australia, British India, and Thailand (Siam) were the only other purchasers of importance. (See table 8.)

Since 1933, crepes have been the largest export item, averaging about 30 percent of the quantity and about 40 percent of the value of the total export trade in filament-rayon fabrics to all countries (except Korea) ^{1/} in 1933-37. Habutae ranked second, averaging slightly less than one-fourth of the quantity and one-fifth of the value in this period. Satins and figured goods, which were of almost equal importance, represented between 10 and 12 percent, respectively, of the total average export trade during those years. In 1939 only crepes exceeded in volume and value the average for 1933-37. (See table 9.)

^{1/} Korean imports from Japan are not segregated by types of weave.

Table 7.- Filament-rayon fabrics (including mixtures): ^{1/} Exports from Japan proper, to Empire areas and principal foreign markets, 1930-39

| Year | All countries | Empire areas | | | Foreign countries | | | | | | | |
|-------------------------------|---------------|--------------|----------|-----------|-------------------|-----------|--------------------|--------------------|-----------|---------|--------|-----------|
| | | Korea | Kwantung | Manchuria | British India 2/ | Australia | Netherlands Indies | Philippine Islands | Hong Kong | Uruguay | Iraq | All other |
| Value (1,000 yen) | | | | | | | | | | | | |
| 1930 3/ | 43,637 | 8,704 | 527 | 237 | 10,526 | 175 | 7,767 | 5,028 | 2,052 | 22 | 4/ | 8,599 |
| 1931 | 45,693 | 5,982 | 215 | 7 | 16,528 | 589 | 7,970 | 2,055 | 1,241 | 41 | 4/ | 10,465 |
| 1932 | 68,456 | 7,918 | 599 | 18 | 22,552 | 2,896 | 13,642 | 1,599 | 126 | 40 | 4/ | 19,066 |
| Average, 1930-32 | 52,595 | 7,534 | 447 | 87 | 16,535 | 1,220 | 9,793 | 3,094 | 1,140 | 34 | - | 12,711 |
| 1933 | 89,609 | 12,230 | 2,371 | 551 | 17,651 | 9,133 | 14,970 | 967 | 437 | 925 | 4/ | 30,374 |
| 1934 | 129,391 | 15,907 | 7,532 | 736 | 22,422 | 16,937 | 13,068 | 1,956 | 930 | 3,688 | 2,583 | 43,632 |
| 1935 | 150,232 | 21,972 | 11,158 | 825 | 22,455 | 22,306 | 12,684 | 4,951 | 4,239 | 3,909 | 4,156 | 41,577 |
| 1936 | 174,904 | 25,734 | 21,494 | 842 | 26,221 | 18,415 | 11,633 | 8,674 | 7,509 | 5,107 | 3,923 | 45,352 |
| 1937 | 183,745 | 28,885 | 15,612 | 2,574 | 32,466 | 16,667 | 11,490 | 5,500 | 7,673 | 3,663 | 5,906 | 53,309 |
| Average, 1933-37 | 145,577 | 20,946 | 11,633 | 1,106 | 24,243 | 16,692 | 12,769 | 4,410 | 4,158 | 3,458 | 3,314 | 42,848 |
| 1938 | 161,178 | 45,416 | 20,243 | 17,029 | 11,527 | 17,303 | 7,202 | 2,096 | 2,150 | 1,217 | 2,261 | 34,634 |
| 1939 | 186,405 | 49,047 | 25,304 | 22,954 | 19,581 | 18,375 | 9,410 | 694 | 2,598 | 684 | 4/ | 37,756 |
| Quantity (1,000 square yards) | | | | | | | | | | | | |
| 1935 5/ | 503,303 | 79,110 | 26,541 | 1,822 | 75,142 | 65,801 | 49,987 | 18,720 | 12,893 | 17,534 | 15,203 | 140,550 |
| 1936 | 621,905 | 94,358 | 56,630 | 2,189 | 92,081 | 58,061 | 51,556 | 35,443 | 26,987 | 23,348 | 16,161 | 165,091 |
| 1937 | 596,850 | 113,721 | 39,334 | 7,168 | 94,854 | 42,364 | 46,780 | 25,303 | 27,253 | 13,466 | 22,126 | 166,481 |
| Average, 1935-37 | 574,686 | 95,729 | 40,635 | 3,733 | 87,359 | 55,402 | 49,441 | 26,489 | 22,378 | 18,116 | 17,830 | 157,374 |
| 1938 | 516,943 | 179,821 | 49,553 | 47,401 | 32,448 | 40,657 | 26,688 | 10,610 | 8,704 | 4,707 | 8,663 | 107,691 |
| 1939 | 408,799 | 98,828 | 32,012 | 33,378 | 49,843 | 44,038 | 32,051 | 2,541 | 9,323 | 2,546 | 4/ | 104,239 |

^{1/} Exclusive of spun-rayon fabri (staple-fiber fabrics) in 1937-39.

^{2/} Includes Ceylon prior to 1934, and Burma prior to 1938.

^{3/} Not separately classified prior to 1930.

^{4/} Not shown separately.

^{5/} Quantity not available prior to 1935.

Sources: Compiled from annual and monthly returns of foreign trade of Japan and Korea.

Table 9.- Japan: Exports of filament-rayon fabrics (including mixtures),
classified by types, 1930-39

| Year | To areas except Korea | | | | | | | | To Korea | Total (to all areas) |
|---|--------------------------|------------|------------------|--------|--------|----------------------------|----------------------------|----------------|----------|-------------------------|
| | Crepes and Kaboori | Nabutas 1/ | Figured goods | Satins | Voiles | Taffetas and poplins | All other fabrics 2/ | Grand total | | |
| Quantity (million square yards—partially estimated) | | | | | | | | | | |
| 1930 3/ | 3 | 5 | 6/ | 11 | 6/ | 11 | 57 | 87 | 6/ | 86 |
| 1931 | 4 | 45 | 6/ | 18 | 6/ | 14 | 62 | 143 | 6/ | 143 |
| 1932 | 10 | 89 | 6/ | 32 | 6/ | 24 | 93 | 248 | 6/ | 248 |
| Average, 1930-32 | 6 | 46 | - | 20 | - | 16 | 71 | 199 | - | 199 |
| 1933 | 37 | 68 | 6/ | 44 | 6/ | 20 | 78 | 247 | 6/ | 247 |
| 1934 | 91 | 51 | 50 | 59 | 49 | 6 | 48 | 314 | 6/ | 314 |
| 1935 | 124 | 80 | 76 | 64 | 42 | 10 | 28 | 434 | 6/ | 434 |
| 1936 | 186 | 143 | 66 | 56 | 30 | 9 | 37 | 527 | 6/ | 527 |
| 1937 | 197 | 124 | 45 | 47 | 27 | 4 | 41 | 485 | 114 | 599 |
| Average, 1933-37 | 127 | 93 | 47 | 54 | 30 | 10 | 46 | 407 | 27 | 434 |
| 1938 | 147 | 64 | 55 | 21 | 16 | 2 | 32 | 337 | 100 | 517 |
| 1939 | 130 | 69 | 42 | 23 | 17 | 3 | 26 | 310 | 99 | 409 |
| Value (million yen) | | | | | | | | | | |
| 1930 3/ | 1 | 2 | 6/ | 4 | 6/ | 5 | 23 | 35 | 9 | 44 |
| 1931 | 2 | 11 | 6/ | 6 | 6/ | 4 | 27 | 40 | 6 | 46 |
| 1932 | 4 | 19 | 6/ | 9 | 6/ | 6 | 22 | 60 | 8 | 68 |
| Average, 1930-32 | 2 | 11 | - | 6 | - | 5 | 21 | 45 | 8 | 53 |
| 1933 | 19 | 16 | 6/ | 13 | 6/ | 6 | 23 | 77 | 12 | 89 |
| 1934 | 41 | 13 | 16 | 17 | 11 | 2 | 13 | 113 | 14 | 129 |
| 1935 | 51 | 19 | 22 | 16 | 8 | 3 | 9 | 128 | 22 | 150 |
| 1936 | 67 | 32 | 19 | 13 | 5 | 2 | 11 | 149 | 26 | 175 |
| 1937 | 75 | 31 | 15 | 14 | 5 | 1 | 14 | 155 | 29 | 184 |
| Average, 1933-37 | 51 | 22 | 14 | 15 | 6 | 3 | 14 | 125 | 21 | 146 |
| 1938 | 57 | 16 | 21 | 7 | 3 | 1 | 11 | 116 | 45 | 161 |
| 1939 | 64 | 21 | 26 | 8 | 4 | 1 | 13 | 137 | 49 | 186 |

^{1/} Quantity for years 1930-34, estimated from data reported by weight, assuming 8 sq. yds. per kin or 6.047 sq. yds. per pound.

^{2/} Includes checked and striped weaves, twills, nashiji weaves, and other goods. Quantity units not reported before 1935, have been estimated for 1930-34 on basis of average annual unit values of principal specified fabrics.

^{3/} Partially estimated for years 1930-34.

^{4/} Not classified by types for Korea.

^{5/} Not reported separately before 1930.

^{6/} Not separately reported.

Sources: Compiled from annual and monthly returns of the foreign trade of Japan and Korea, except for estimates as noted.

Table 10.- Comparison of production, exports and apparent consumption, in Japan proper, of filament-rayon fabrics, spun-rayon fabrics and total rayon fabrics, 1939

| Type of fabric | Production | Exports | Apparent consumption | Ratio of exports to supply | Ratio of consumption to supply |
|---|---------------------------------|---------|----------------------|----------------------------|--------------------------------|
| | Quantity (Million square yards) | | | Percent | Percent |
| Broad-woven (pure): | | | | | |
| Filament-rayon ----- | 1/ 1,280 | 2/ 409 | 871 | 32.0 | 68.0 |
| Spun-rayon ----- | 1/ 612 | 2/ 107 | 505 | 17.5 | 32.5 |
| Total, broad goods: | 1,892 | 516 | 1,376 | 27.3 | 72.7 |
| | | | | | |
| | Value (Million yen) | | | | |
| Broad-woven (pure): | | | | | |
| Filament-rayon ----- | 232 | 186 | 46 | 80.2 | 19.8 |
| Spun-rayon ----- | 3/ 200 | 62 | 138 | 31.0 | 69.0 |
| Total, broad goods: | 432 | 248 | 184 | 57.1 | 42.9 |
| | | | | | |
| | Value (Million yen) 4/ | | | | |
| Total, all widths including specialties and mixtures: | | | | | |
| Filament-rayon ----- | 368 | 186 | 182 | 50.5 | 49.5 |
| Spun-rayon ----- | 3/ 276 | 62 | 214 | 22.5 | 77.5 |
| Grand total ----- | 644 | 248 | 396 | 38.5 | 61.5 |

1/ Partially estimated. Converted from meters as given in tables 4 and 5 on basis of 1.0936 yards per meter. Broad fabrics assumed to average 36 inches in width.

2/ Exports assumed to be almost entirely fabrics of pure rayon (unmixed) in broad widths.

3/ Partially estimated.

4/ Only value can be shown as the total production of all widths and types is not available in comparable units of quantity.

Source: Adapted from data in tables 4 and 5.

PURL: <http://www.legal-tools.org/doc/ba4052/>